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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,082	06/24/2004	Shuichi Kitamura	542-012.010	5847
4955 7590 09/27/2007 WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			EXAMINER BERNSHTEYN, MICHAEL	
			ART UNIT 1713	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,082	Applicant(s) KITAMURA ET AL.	
	Examiner Michael Bernshiteyn	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-11,13-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-11,13-17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on July 28, 2007. Claim1 has been amended; claims 8, 12 and 18 have been cancelled; no claims have been added.
2. In view of the amendment(s), the rejection of claims 1, 3-6, 8-11 and 13-19 under 35. U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Nishiguchi et al. (JP 09-324096) and the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi'096 in view of Nishiguchi et al. (JP 10-060207) have been withdrawn.
3. Applicant's arguments with respect to claims 1, 3-11 and 13-19 have been considered but are moot in view of the new ground(s) of rejection.
4. Claims 1, 3-7, 9-11, 13-17 and 19 are pending.

Claim Rejections - 35 USC § 103

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
6. Claims 1, 3-7, 9-11, 13-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. (JP 09-324096) in view of Fujiwara et al. (EP 1 251 147 A1).

With regard to the limitations of claims 1, 3-6 and 11, Nishiguchi discloses a composition comprises a modified PVA resin having anionic groups (preferably **carboxyl and/or sulfo groups**) preferably in the amount of 2.0-40.0-mol% and a PVA resin having a degree of saponification of 70-99% and a degree of polymerization 200-

8,000. The modified PVA resin having carboxylic groups is produced by Michael addition reaction with acrylonitrile or acrylamide and partly or fully hydrolyzing the reaction product, wherein the weight ratio of A/B is from 95:5 to 5:95, which is within the claimed range (abstract). Example 1 discloses a film formed from a composition comprising a mixture of 35 parts of a modified PVA having saponification degree of 96.3%, and 65 parts of a modified PVA having saponification degree of 71.1%. This film has mechanical strength, alkali-resistance, hygroscopic and crack resistance and has dissolution rate; it is suitable to encapsulate chemical products (Table 1, page 4, [0038]-[0040]).

Nishiguchi does not disclose that polyvinyl alcohol composition contains 0.1 to 50 parts by weight of trimethylolpropane as plasticizer (C).

Fujiwara discloses a water-soluble film which comprises a modified polyvinyl alcohol containing an N-vinylamide monomer unit in an amount of 1 to 10 mole percent, and a carboxyl group and a lactone group in a total amount of 0.020 to 4.0 mole percent in the molecule, and having a degree of polymerization of 300 to 3000, and a degree of hydrolysis of 75 to 99.5 mole percent (abstract).

With regard to the limitations of claims 1, Fujiwara discloses that the plasticizer to be mixed in the water-soluble film has no particular restriction so long as it is commonly used as a plasticizer for a PVA. For the purpose of improving the water solubility, glycerin, diglycerin, diethylene glycol, triethylene glycol, propylene glycol, dipropylene glycol, **trimethylolpropane**, polyethylene glycol, and polyvinyl pyrrolidone are preferably used. Particularly, from the viewpoint of inhibiting the reduction in water

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solubility of the film due to the bleedout of the plasticizer, **glycerin**, diglycerin, **trimethylolpropane**, polyethylene glycol, and polyvinyl pyrrolidone are in particular preferably used. These may be used singly or in combination of at least two (page 7, [0049]). The amount of the plasticizer to be mixed is preferably **from 1 to 50 parts by weight** per 100 parts by weight of the modified PVA, which is clearly within the claimed range (page 8, [0051]).

Both references are analogous art because they are from the same field of endeavor concerning water-soluble film comprises a modified polyvinyl alcohol and a plasticizer.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate trimethylolpropane in the adjusted amount as taught by Fujiwara in Nishiguchi's polyvinyl alcohol composition in order to obtain a water-soluble film having improved water solubility and from the viewpoint of inhibiting the reduction in water solubility of the film due to the bleedout of the plasticizer (EP'147, page 7, [0049]), and thus to arrive at the subject matter of instant claim 1.

With regard to a ratio of storage modulus and a glass temperature instantly claimed in claim 1, the combined teaching of Nishiguchi and Fujiwara is silent about it. However, in view of substantially identical polyvinyl alcohol composition between Nishiguchi and Fujiwara and instant claim 1 (exactly the same polymerized monomers, degrees of hydrolysis, the difference in degree of hydrolysis, plasticizer and its amount, substantially identical method of the preparation of the final composition), it is the examiner position that Nishiguchi and Fujiwara's polyvinyl alcohol composition

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possesses these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. ***In re Best*** 195 USPQ 430, (CCPA 1977).

With regard to the limitations of claim 7, Nishiguhci discloses that further the components can be mixed with fine particles (page 3, [0022]), but he does not disclose that the film further contain an inorganic filler having an average particle size of 1-10 μ m.

Fujiwara discloses that to the water-soluble film inorganic filler may further be mixed. Examples of the inorganic filler to be used in the water-soluble film may include clays and talks such as silica, heavy, light, or surface-treated calcium carbonate, aluminum hydroxide, aluminum oxide, titanium oxide, diatomaceous earth, barium sulfate, calcium sulfate, zeolite, zinc oxide, silicic acid, silicate salts, mica, magnesium carbonate, kaolin, halloysite, pyrophyllite, and sericite. These may be used singly or in combination of at least two thereof. Out of these, talk is preferably used particularly from the viewpoint of the dispersibility in the modified PVA. The mean particle size of the inorganic filler is preferably at least 1 μ m from the viewpoint of the antiblock properties of the film, whereas it is preferably not more than 10 μ m from the viewpoint of the dispersibility in the modified PVA, which is clearly within the claimed range (page 8, [0053]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate an inorganic filler (B) having an average particle size of 1 to 10 μ m as taught by Fujiwara in Nishiguchi's polyvinyl alcohol composition in order to obtain a water-soluble film having improved water solubility and

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from the viewpoint of inhibiting the reduction in water solubility of the film due to the bleedout of the plasticizer (EP'147, page 7, [0049]), and thus to arrive at the subject matter of instant claim 7.

With regard to the limitations of claims 9-10, 13-17 and 19, Nishiguchi discloses the usage of ethylene glycol, glycerol or diglycelol as plasticizers, and low-molecular weight polyethylene glycol, coloring agent, an alkaline substance, agricultural chemicals, etc. (page 3, [0026]-[0027]). All of the above compounds can be considered as chemicals.

Thus, the combination of Nishiguchi and Fujiwara renders all instant claims *prima facie* obvious in view of absent of unexpected results commensurate in scope of claims.

Response to Arguments

7. Applicants traverse the rejection of claims 1, 3-9 and 11 under 35 U.S.C. 102(b) as being anticipated by, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishiguchi et al. (JP 09-324096) and the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi'096 in view of Nishiguchi et al. (JP 10-060207).

Applicant's arguments have been fully considered but they are not persuasive.

8. As to Applicants arguments that the plasticizer trimethylolpropane as claimed is essential in achieving a T_g of no more than 20°C in the PVA film of the present invention, and the lower T_g thus resulted makes the PVA film of the present invention different from the PVA film of JP-096 (page 6, 1st paragraph), it is noted that current

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Office Action (paragraph 6) contains the rejection of amended claim 1 with all new limitations.

9. In response to Applicants argument that the elongation values of the examples of the instant application indicate that the glass transition temperatures of the samples must be higher than the temperature under which the elongation was measured (page 6, the last paragraph), it is noted that in view of substantially identical polyvinyl alcohol composition between Nishiguchi and Fujiwara and instant claim 1 (exactly the same polymerized monomers, plasticizer and its amount, substantially identical method of the preparation of the final composition), it is the examiner position that Nishiguchi and Fujiwara's polyvinyl alcohol composition possesses these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Best* 195 USPQ 430, (CCPA 1977).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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09/20/2007


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